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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,924	01/14/2004	Hoo Y. Chung	758.1149USC1	5125
23552	7590	03/25/2005	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			GREENE, JASON M	
			ART UNIT	PAPER NUMBER
			1724	
DATE MAILED: 03/25/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/757,924

Applicant(s)

CHUNG ET AL.

Examiner

Jason M. Greene

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 190-246 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 190-246 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/29/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The disclosure is objected to because pages 47 and 49 of the Specification have been written on in landscape orientation rather than in portrait orientation. See 37 CFR 1.52(a)(iii). Appropriate correction is required.
2. The Examiner suggests Applicants update the status of the parent Application in the first paragraph of the specification. Application 09/871,583 issued as U.S. Patent 6,743,273 B2 on 01 June 2004.

Claims

3. With regard to claims 220 and 229, the Examiner suggests Applicants delete the phrase "the substrate comprising a filtration medium" since the same limitation is recited earlier in each claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 190-197 are rejected under 35 U.S.C. 102(e) as being anticipated by Emig et al.

With regard to claims 190, 192 and 193, Emig et al. discloses a filter media comprising a fine fiber layer and a substrate having a basis weight of 100 g/m², the fine fiber comprising a polyvinyl alcohol having a fiber size of 0.05 micron in col. 2, lines 26-53 and col. 3, lines 32-41.

While Emig et al. does not explicitly disclose the fine fibers having the recited stability properties, the fine fibers of Emig et al. will inherently possess the recited stability properties since the fine fibers of Emig et al. are formed from the same materials and have the same diameters as the claimed fine fibers.

With regard to claim 191, since Emig et al. teaches the fine fibers being formed from copolymers of the polymers recited in col. 3, lines 50-53, the fine fiber comprising a blend of two polyvinyl alcohol polymers is within the scope of the Emig et al. teaching.

With regard to claims 194-197, Emig et al. discloses the substrate comprising a spunbonded polymeric (e.g. polypropylene or polyester) non-woven fabric in col. 3, lines 32-42.

6. Claims 209-219 are rejected under 35 U.S.C. 102(e) as being anticipated by Healey.

Healey discloses a filter media comprising a fine fiber layer (14) and a substrate (12) having a basis weight of 55 g/m², the fine fiber comprising an acrylic polymer and having a fiber size (diameter) of 0.1 microns, the substrate comprising a spunbonded nonwoven polymeric (e.g. polyester, polypropylene) in Fig. 1, col. 3, lines 31-58, col. 6, lines 25-60, col. 8, lines 7-31 and col. 13, lines 8-23.

While Healey does not explicitly disclose the fine fibers having the recited stability properties, the fine fibers of Healey will inherently possess the recited stability properties since the fine fibers of Healey are formed from the same materials and have the same diameters as the claimed fine fibers.

7. Claims 239-246 are rejected under 35 U.S.C. 102(b) as being anticipated by Kahlbaugh et al. '399.

With regard to claims 239 and 241-246, Kahlbaugh et al. '399 discloses a filter media comprising a fine fiber layer and a substrate having a basis weight of 45 g/m², the fine fiber comprising a polyvinyl chloride and having a fiber size of 0.1 micron, the

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substrate comprising a filtration media comprising a spunbonded nonwoven polymeric (polyester) fabric in col. 15, line 55 to col. 16, line 64.

While Kahlbaugh et al. '399 does not explicitly disclose the fine fibers having the recited stability properties, the fine fibers of Kahlbaugh et al. '399 will inherently possess the recited stability properties since the fine fibers of Kahlbaugh et al. '399 are formed from the same materials and have the same diameters as the claimed fine fibers.

With regard to claim 240, since Kahlbaugh et al. '399 teaches the fine fibers being formed from copolymers of the polymers recited in col. 16, lines 56-64, the fine fiber comprising a blend of two polyvinyl chloride polymers is within the scope of the Kahlbaugh et al. '399 teaching.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 201-208 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kahlbaugh et al. '399 in view of Miller et al.

Kahlbaugh et al. '399 discloses a filter media comprising a fine fiber layer and a substrate having a basis weight of 45 g/m^2 , the fine fiber comprising a nylon and having a fiber size of 0.1 micron, and the substrate comprising a spunbonded nonwoven polymeric (polyester) fabric in col. 15, line 55 to col. 16, line 64.

Kahlbaugh et al. '399 does not disclose the fine fibers comprising one of the recited polymers.

Miller et al. discloses a similar filter media comprising fine fibers comprising a nylon 66 or a blend of two nylon polymers (e.g. nylon 66, nylon 610, nylon 6, nylon 11), the fine fiber having a fiber size (diameter) of 0.1 microns in Fig. 3 and col. 5, lines 25-49.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the nylon 66 of Miller et al. into the filter media of Kahlbaugh et al. '399 to provide a filter media having a fine fiber layer suitable for a specific application. Furthermore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the nylon 66 of Miller et al. for the nylon of Kahlbaugh et al. '399 in that such are alternate polymers in the art for forming a layer of fine fibers on a substrate, mere substitution of one fine fiber forming polymer for another in the art without a showing of unexpected or unobvious results being within the scope of one having ordinary skill in the art.

While Miller et al. does not explicitly disclose the fine fibers having the recited stability properties, the fine fibers of Miller et al. will inherently possess the recited

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stability properties since the fine fibers of Miller et al. are formed from the same materials and have the same diameters as the claimed fine fibers.

Double Patenting

10. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

11. Claims 190, 193, 198-200, 220, 222, 227 and 228 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12 of U.S. Patent No. 6,716,274 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other.

With regard to claims 190, 193, 198, 220 and 222, claim 10 of U.S. Patent No. 6,716,274 B2 claims a filter media comprising a fine fiber layer and a substrate having a basis weight not greater than 200 g/m², the fine fiber comprising the reaction product of a polymer resin (polyvinyl alcohol) and a cross linking agent, the fiber having a fiber size

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of 0.01 to 0.5 microns, the substrate comprising a filtration media, wherein after exposure to air at 140 °F and 100 percent relative humidity for 16 hours greater than 30 percent of the fiber remains substantially unchanged.

While claim 10 of U.S. Patent No. 6,716,274 B2 is directed to an air filter assembly comprising the claimed filtration media, one of ordinary skill in the art would have recognized that the filtration media could have been separately used in different filter assemblies.

The instantly claimed ranges for the substrate basis weight and the percentage of fiber survival are seen as lying within the ranges disclosed in the '274 patent. Therefore, a prima facie case of obviousness exists which must be overcome through a showing of unexpected or unobvious results.

With regard to claims 199, 200, 227 and 228, claims 11 and 12 of U.S. Patent No. 6,716,274 B2 claims the crosslinking agent comprising polyacrylic acid and melamine formaldehyde.

12. Claims 191 and 221 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 10 of U.S. Patent No. 6,716,274 B2 in view of claim 9 of U.S. Patent No. 6,673,136 B2.

Claim 10 of U.S. Patent No. 6,716,274 B2 does not claim the fine fiber comprising the reaction product of a blend of two polymer resins and a cross linking agent.

Claim 9 of U.S. Patent No. 6,673,136 B2 claims a similar filter media comprising a fine fiber comprising the reaction product of a copolymer comprising polyvinylalcohol and a cross linking agent.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the crosslinked copolymer of claim 9 of U.S. Patent No. 6,673,136 B2 into the fine fibers of claim 10 of U.S. Patent No. 6,716,274 B2 to provide a filter media capable of performing in a specific environment.

13. Claims 223-226 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 10 of U.S. Patent No. 6,716,274 B2 in view of Kahlbaugh et al. '399.

Claim 10 of U.S. Patent No. 6,716,274 B2 does not claim the substrate comprising a woven or non-woven fabric.

Kahlbaugh et al. '399 discloses a similar filter media wherein the substrate comprises a spunbonded nonwoven polymeric (polyester) fabric in col. 15, line 55 to col. 16, line 64.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the spunbonded nonwoven polymeric (polyester) fabric of Kahlbaugh et al. '399 into the substrate of Claim 10 of U.S. Patent No. 6,716,274 B2 to provide a substrate material that is sufficiently strong and tough to withstand manipulations during manufacture and handling and to survive operating conditions, as suggested by Kahlbaugh et al. '399 in col. 15, lines 37-42.

14. Claims 229, 231, 232, 237 and 238 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12 of U.S. Patent No. 6,716,274 B2 in view of Dzenis et al.

With regard to claims 229, 231 and 232, claim 10 of U.S. Patent No. 6,716,274 B2 claims a filter media comprising a fine fiber layer and a substrate having a basis weight not greater than 200 g/m^2 , the fine fiber comprising the reaction product of a polymer resin (polyvinyl alcohol) and a cross linking agent, the fiber having a fiber size of 0.01 to 0.5 microns, the substrate comprising a filtration media, wherein after exposure to air at 140°F and 100 percent relative humidity for 16 hours greater than 30 percent of the fiber remains substantially unchanged.

While claim 10 of U.S. Patent No. 6,716,274 B2 is directed to an air filter assembly comprising the claimed filtration media, one of ordinary skill in the art would have recognized that the filtration media could have been separately used in different filter assemblies.

The instantly claimed ranges for the substrate basis weight and the percentage of fiber survival are seen as lying within the ranges disclosed in the '274 patent. Therefore, a prima facie case of obviousness exists which must be overcome through a showing of unexpected or unobvious results.

Claim 10 of U.S. Patent No. 6,716,274 B2 does not claim the fine fibers being electrospun.

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Dzenis et al. teaches electrospun fine fibers having diameters between 5 and 5000 nm (0.005 and 5.0 microns) in col. 8, line 18 to col. 9, line 38.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the electrospun fine fiber forming process of Dzenis et al. into the filter media of claim 10 of U.S. Patent No. 6,716,274 B2 to provide fine fibers capable of performing in a specific environment.

With regard to claims 237 and 238, claims 11 and 12 of U.S. Patent No. 6,716,274 B2 claims the crosslinking agent comprising polyacrylic acid and melamine formaldehyde.

15. Claim 230 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 10 of U.S. Patent No. 6,716,274 B2 and Dzenis et al. as applied to claim 229 above, and further in view of claim 9 of U.S. Patent No. 6,673,136 B2.

Claim 10 of U.S. Patent No. 6,716,274 B2 does not claim the fine fiber comprising the reaction product of a blend of two polymer resins and a cross linking agent.

Claim 9 of U.S. Patent No. 6,673,136 B2 claims a similar filter media comprising a fine fiber comprising the reaction product of a copolymer comprising polyvinylalcohol and a cross linking agent.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the crosslinked copolymer of claim 9 of U.S. Patent No. 6,673,136 B2 into the fine fibers of claim 10 of U.S. Patent No. 6,716,274 B2 to provide a filter media capable of performing in a specific environment.

16. Claims 233-236 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12 of U.S. Patent No. 6,716,274 B2 and Dzenis et al. as applied to claim 229 above, and further in view of Kahlbaugh et al. '399

Claims 10-12 of U.S. Patent No. 6,716,274 B2 does not claim the specific substrate material.

Kahlbaugh et al. '399 discloses a similar filter media wherein the substrate comprises a spunbonded nonwoven polymeric (polyester) fabric in col. 15, line 55 to col. 16, line 64.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the spunbonded nonwoven polymeric (polyester) fabric of Kahlbaugh et al. '399 into the substrate of Claim 10 of U.S. Patent No. 6,716,274 B2 to provide a substrate material that is sufficiently strong and tough to withstand manipulations during manufacture and handling and to survive operating conditions, as suggested by Kahlbaugh et al. '399 in col. 15, lines 37-42.

Conclusion

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17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M. Greene
Examiner
Art Unit 1724


3/18/05

jmg
March 18, 2005